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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,906	09/23/2003	Shun Li Lin	MXIC-P910277	2515

7590 12/06/2005
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EXAMINER

CHEN, JACK S J

ART UNIT PAPER NUMBER

2813

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/668,906	Applicant(s) LIN, SHUN LI	
	Examiner Jack Chen	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,10,12-21 and 23-32 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4-6,10 and 12-20 is/are allowed.
- 6) ☒ Claim(s) 21,23-26 and 28-31 is/are rejected.
- 7) ☒ Claim(s) 27 and 32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/30/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

In response to the communication filed on September 26, 2005, claims 1-2, 4-6, 10, 12-21, 23-32 are active in this application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 21, 23, 26, 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Otsuki, U.S./6,436,772 B2.

Otsuki discloses a method of code programming a ROM device, which comprises providing a substrate 5 having a plurality of code positions (figs. 3A or 4A or 5A), and a first code pattern 6 (fig. 3A) or 13 (fig. 4D) or 14 (fig. 5C) which comprises a plurality of code openings 6c (fig. 3A) or 13a (fig. 4D) or 14a (fig. 5C) that expose substantially all of the code positions (fig. 3A or fig. 4D or 5C); and forming a developable anti-reflective coating 18 (fig. 3D) or 20 (fig. 4E) or 15 (fig. 5D) over the substrate to fill the plurality of code openings, see figs. 1A-5D and cols. 1-8 for more details. Note: photoresist is the developable anti-reflective coating (i.e., photoresist absorbs light).

Re claim 23, wherein the first code pattern comprises a plurality of code openings formed in a dielectric material 6 (fig. 3A).

Re claim 26, further comprising removing a portion of the developable anti-reflective coating to form a second code pattern (i.e., removing to expose layer 2, fig. 3D or layer 6, fig. 4E or 5D), the second code pattern including less than all of the plurality of code openings.

Re claim 28, wherein the developable anti-reflective coating is formed over the substrate without an etch-back process to expose portions of the first code pattern (i.e., figs. 5D or 4E or 3D).

Re claim 29, wherein the method is effective to provide a relatively wider photo process window compared to a substantially identical method practiced without a developable anti-reflective coating (i.e., figs. 5D or 4E).

Re claim 30, wherein the developable anti-reflective coating is removed by controlling at least one of baking temperature and light exposure (inherently shows this feature since photoresist is considered as the developable anti-reflective coating).

3. Claims 21, 23-26, 28-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al., U.S. 6,689,663 B1.

Chang et al. disclose a method of code programming a ROM device, which comprises providing a substrate 10 (fig. 1) or 21 (fig. 6) having a plurality of code positions, and a first code pattern 14 (fig. 3) or 28 (fig. 6) which comprises a plurality of code openings that expose substantially all of the code positions; and forming a developable anti-reflective coating 18 (fig. 4) or 31 (fig. 8) over the substrate to fill the plurality of code openings, see figs. 1-9 and cols. 1-

14 for more detail. Note: photoresist/resist is considered as the developable anti-reflective coating.

Re claim 23, wherein the first code pattern comprises a plurality of code openings formed in a dielectric material 14 (fig. 3).

Re claim 24, wherein the dielectric material comprises silicon dioxide (fig. 1, col. 6, lines 35-40).

Re claim 25, wherein the developable anti-reflective coating is formed by a spin on coating method (col. 6, lines 45-50).

Re claim 26, further comprising removing a portion of the developable anti-reflective coating to form a second code pattern (figs. 4 or 8, removing at least a portion of the developable anti-reflective coating to expose layer 12 or 17), the second code pattern including less than all of the plurality of code openings.

Re claim 28, wherein the developable anti-reflective coating is formed over the substrate without an etch-back process to expose portions of the first code pattern (figs. 4 or 8).

Re claim 29, wherein the method is effective to provide a relatively wider photo process window compared to a substantially identical method practiced without a developable anti-reflective coating (figs. 4 or 8).

Re claim 30, wherein the developable anti-reflective coating is removed by controlling at least one of baking temperature and light exposure (col. 8, lines 10-30).

Re claim 31, wherein the developable anti-reflective coating is removed by exposing the developable anti-reflective coating to a photo developer (col. 6, lines 40-45 and col. 8, lines 10-30, etc.).

Allowable Subject Matter

4. Claims 27 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is an examiner's statement of reasons for allowance: the prior art of record neither teach nor make obvious the claimed limitation of the instant application as a whole (in addition to the base claim) as recited in claims 27 and 32, respectively.

6. Claims 1-2, 4-6, 10, 12-20 are allowable over the prior art of record.

7. The following is an examiner's statement of reasons for allowance: the prior art of record neither teach nor make obvious the claimed limitation of the instant application as a whole as recited in claim 1. In particular, the prior art does not teach or suggest the particular subset of the process steps for code programming a ROM device by forming a second implant resistant layer over the developable anti-reflective coating layer; processing a portion of the second implant resistant layer to form a second code pattern which comprises a portion of the code openings of the first code pattern; and removing the developable anti-reflective coating layer from the code openings of the second code pattern.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Chen whose telephone number is (571)272-1689. The examiner can normally be reached on Monday-Friday (9:00am-6:30pm) alternate Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead can be reached on (571)272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jack Chen
Primary Examiner
Art Unit 2813

December 2, 2005